REMARKS

Claims 1-20 have been amended. Claims 1-20 still remain pending in this application.

I. Drawing Objection

The office action states that Fig. 2 is objected to because it fails to show the line 7-7 which is referred to in the Brief Description of the Figures. Line 7-7 appears in Fig. 3, as originally filed. Therefore, the description of the figures as to Figs. 7A, 7B and 7C have been amended to refer to Fig. 3. Applicant submits that the drawings and the specification are now clear and definite.

II. Claim Objections

Claim 8 was objected to for combining the word "laminate" with "and". Applicant has changed this to "laminate and" as requested by the Examiner. It should be noted that Applicant did originally include a space between these words as can be seen in the published version of the application (US 2004/0108045 A1). However, in the XML version of the application, as a result of electronic filing, does not clearly show the space between these two words. Apparently, this version was used as the examination copy.

III. Rejection of Claims 1-20 under Section 112

The Examiner has rejected the claims under Section 112 for the language of "at least one visible portion" as being new matter. Accordingly, Applicant has amended the claims to remove this reference.

As to Claim 1, the reference to "laminate" in the preamble has been removed to make the claim more clear and definite. Claim 1 has been amended to recite "sealing" as the type of strip which has no structural limitation and, therefore, suitable for placement in the preamble. Dependent Claims 2-20 have been amended to simply recite "a method" rather than details in the preamble concerning a laminate strip.

As to Claim 14, the claim dependency has been changed to Claim 2 that has the proper support for "filler material".

In view of the foregoing, Applicant submits that the claims are now definite and clear under Section 112.

IV. Rejection of Claims 1-20 under Section 102

Claims 1, 4, 6-7, 9 and 20 stand rejected under Section 102 as being anticipated by Matsumiya (US 5204157). The office action states that Matsumiya clearly anticipates the claims.

Matsumiya teaches a carrier and method for the production of door seals, and the like. Matsumiya has identified a well known problem with such carriers of the difficulty in controlling the stiffness and flexibility of the carrier across its width because the substrate carrier (e.g. metal) is formed of a uniform construction. See Col. 2, lines 35-39. Such uniform construction does not allow for the control of stiffness and flexibility across the width of the carrier. Matsumiya has addressed this known problem in carriers of uniform construction by not changing the underlying carrier itself but providing add-on longitudinal reinforcement. In particular, Matsumiya provides for a number of longitudinally running reinforcement strands 9 that zig zag across the width of the carrier thereby controlling the stiffness and flexibility of the carrier across its width. The zig zagging path of strands 9 is selected and arranged to control the amount of flexibility and stiffness across the width of the carrier and at the appropriate regions along the length of the assembly.

Matsumiya also discloses that its zig zag strands 9 can be used on knitted or non-knitted wire carriers, such as slotted metal carriers, i.e. ones that are not made of wire, but stamped, pressed, or formed metal, or in carriers of other material." See Col. 2, lines 40-46. However, Matsumiya does not teach or suggest using its zig zag strands on a

pre-form length of continuous wire. Matsumiya only teaches the use of its strands on wire that has been knitted.

Similar to Matsumiya, Applicant's laminate strip assembly also generally includes a wire base carrier and longitudinal reinforcement strands. However, there are significant differences in the method of Applicant's invention compared to that disclosed by Matsumiya.

Most notably, Applicant's invention, as in the claims as amended, provides for a method that uses a continuous strand of material as the base wire carrier where the material is specifically selected to be a pre-formed continuous wire member rather than a knitted wire or metal slotted carrier. Matsumiya discloses use of its longitudinal strands for knitted wire or slotted metal or formed metal. Matsumiya is devoid of any disclosure, teaching or suggestion of use of a continuous strand of wire which pre-formed into its finished shaped prior to affixation of the longitudinal reinforcement strands. As will be described in detail below, the construction of the wire base carrier is of critical importance in Applicant's method because it can produce a strip that accommodate much tighter roll-formed turns around a tighter radius structure.

By way of background, when wire is knit into a carrier for formation of a prior art assembly it is bent and formed as the wire is fed into to the knitting machine. Due to construction and limited capabilities of knitting machines, it is very difficult to control the shape of the ends of a wire which bent by knitting resulting in inconsistently formed loops. Thus, prior art methods result in a knitted wire with undulating continuous bends, such as banana-like formations, with a uniform pattern. In other words, a knitted wire undulates back and forth and is completely symmetrical about the center line running through the center and along the length of the wire carrier. Since the wire is actually knitted by the knitting machine, it must be placed on pins therein for "on the fly" bending during the knitting process. Tighter bends can be formed, as seen in the Schlegel and

GB '933 patents, around the pins of the knitting machine. However, due to the limitations of wire knitting, the wire can only have symmetrical configurations.

In general, these problems in the prior art arise due to any looping or on-the-fly bending of the wire. This wire bending occurs in knitting, as described above, and also occurs when wire is sewn, braided or otherwise looped or bent. This is in direct contrast to Applicant's pre-formed wire.

As seen in the attached Fig. 4 of Matsumiya, if the knitted wire is roll-formed along the indicated arc, the bends of the wire located at the bottom will almost immediately touch each other while the bends at the top will separate from one another forming gaps. Thus, such a looping wire shaped cannot accommodate tight turns with non-symmetrical or profiled configuration of the loops. This is a severe limitation in know assemblies with knitted wire carriers. Also, such a uniform undulating wire pattern that results from knitted will result in a gaps in the wire support what will cause an uneven wire support. It is not possible to profile the loops, such as in Fig. 5 (and see attached) where loops on one side are different than on the other side (i.e. non-symmetrical). These non-symmetrical loops, only possible with the method of the present invention, can be custom designed to accommodate a particular installation environment.

Moreover, a carrier made with Matsumiya's method will suffer from uneven elongation and surging when it is passed through an extruder. These problems during extrusion are exacerbated due to the inconsistency of the loops due to the stress of knitting. Even if the corners can be tightened to be pointed, they must be symmetrical about the longitudinal center line running along the length of the strip. Also, a knitted wire cannot be profiled like, for example, the pre-form wire of Figs. 4-6 of the present invention. This unique, custom profiles are not possible when the wire is knitted along with the longitudinally running reinforcing stitching.

Applicant solves the aforementioned problems with the prior by providing a vastly improved supporting carrier for the assembly. Instead of changing the longitudinal reinforcement strands on the supporting carrier as in Matsumiya, Applicant provides a method that can form a superior wire carrier. In particular, Applicant's method uses a support structure that is a pre-form that is made of wire which is not knitted. This construction has significant advantages over the prior art. The method pre-bends Applicant's wire into many different shapes, sizes and configurations using known wire bending machines. Figs. 3-6 of Applicant's invention illustrate 4 examples of the many different configurations that can be formed. These designs are not just mere design choices but wire patterns that are engineered for certain environments and applications taking into account the anticipated amount and locations of roll-forming.

For example, the attached photographs illustrate the unique pre-formed continuous wire of Fig. 5 of Applicant's invention. This particular pre-form of the present invention has on one side of the bend a straight line inward taper. See also top photo labeled "Present Invention". The bottom photo simulates roll-forming when along the indicated arc. As can be seen the unique ability to provide a straight line inward taper enables a tight bend at the bottom with no gaps at the top. Each of the lateral cross members of the wire are virtually perpendicular to the path of the indicated arc thus providing even support and distribution of the wire in the assembly to provide consistent elongation along the entire length of the assembly. This is not possible with prior art reinforced uniform knitted wire or reinforced uniform slotted or formed metal. Fig 4 is another illustration of the employment of a straight line inward taper of the present invention where the bends on both side of the pre-form wire include a straight line inward taper on one side and not on the other side to address the particular design needs of the application at hand.

Moreover, Applicant's method uses a non-knitted pre-form strand in a precisely formed support structure unlike the knitted wire of the prior art. As a result, a sealing strip with Applicant's pre-form wire carrier has consistent elongation through an extruder resulting in a consistent profile with predictable shrinkage. Thus, Applicant's method produces a sealing strip that has complete control over elongation of the strip during manufacture and installation unlike prior art knitted assemblies.

In view of the foregoing, Matsumiya fails to teach a method of forming a sealing strip assembly as in Applicant's claims, as amended. Matsumiya fails to disclose a method that employs a pre-formed non-knitted wire where longitudinal reinforcement members are attached thereto without stitching or knitting. Such a claimed method is only possible with Applicant's pre-form continuous length of wire.

Therefore, Matsumiya fails to anticipate Claim 1. As a result, Claim 1 is allowable over the cited prior art. Since Claims 4, 6-7, 9 and 20 depend from now allowable Claim 1, Applicant submits that these dependent claims are now also allowable over Matsumiya.

V. Rejection of Claims 2 and 14-17 under Section 103

Claims 2 and 14-17 stand rejected under Section 103(a) as being unpatentable over Matsumiya (US 5204157) in view of Keys (4970101). The office action cites "Key (US 5,204,157)" but this patent number refers to Matsumiya. It is understood that Key 4,970,101 was intended to be cited.

As discussed above, Matsumiya teaches a method for forming a carrier by knitting zig zagging longitudinal members and wire. Keys teaches a laminate flexible strip that includes an array of separate parallel transverse members that are held in place by magnets during the extrusion process and then adhered in place. These parallel transverse members are highly desirable for improved roll forming. However, Keys suffers for the drawbacks of a complicated and tedious extrusion process that employs

multiple individual transverse members. Thus, the strip of Keys cannot be economically manufactured. Since the Keys strip uses individual strips, the cut free ends can pierce through the sides of the strip resulting in a dangerous porcupine effect.

The present invention avoids the aforesaid problems by providing a single piece of undulating wire, rather than separate wire members, with longitudinally running reinforcement members thereon, such as fiber strands or mask film.

There is no suggestion or teaching why Matsumiya would have any desire to fill the voids in the wire with the filler of Keys in light of the knitting thereon. Keys employs filler in its parallel separate clip configuration. As a result, there is no suggestion or teaching in Keys for use of filler in a knitted wire environment.

The office action states that Keys teaching the steps of adhering a mask layer onto the strand of wire. Keys teaches the step of adhering separate clips to the longitudinally running wires. Keys must adhere the strips (other than by knitting) because the wire is not knitted to form its strip. In contrast, Matsumiya forms the meandering wire by knitting (See reference 9 of Fig. 2) to prevent elongation of the strip thereby completely obviating the need for adhering the clips to the wire. Since the methods of Matsumiya and Keys are so different, it would not be obvious for Matsumiya to adhere a mask layer on the wire.

Matsumiya and Keys respectively teach incompatible methods for forming a sealing strip. Thus, combining Matsumiya and Keys under Section 103 is without merit.

Moreover, Claims 2 and 14-17 are dependent on now allowable Claim 1. Therefore, Claims 2 and 14-17 are now allowable over the cited prior art.

Therefore, the combination of Matsumiya and Keys fail to render obvious Claims 2 and 14-17 under Section 103. Claims 2 and 14-17 are patentable over the cited prior art.

VI. Rejection of Claims 3, 5 under Section 103

Claims 3 and 5 stand rejected under Section 103(a) as being unpatentable over Matsumiya (US 5204157) in view of Burden et al or FR 2524406.

Claims 3 and 5 are dependent on now allowable Claim 1. Therefore, Claims 3 and 5 are now allowable over the cited prior art.

VII. Rejection of Claim 10 under Section 103

Claim 10 stands rejected under Section 103(a) as being unpatentable over Matsumiya (US 5204157) in view of Schlegel or GB 1478963. The office action states that Shlegel or GB '963 teaches the formation of V-shaped junctions at the bends of the wire.

Schlegel and GB '963 both teach a method of forming a sealing strip that includes knitting wire along with some type of textile into a carrier member. For example, in Schlegel '624, the wire is bend back and forth in a knitting machine where stitching is attached thereto concurrently. This is a typical example of a knitted carrier member that is well-known in the prior art. The "on the fly" bending of the wire to form the loops results in an symmetrical wire carrier and is, therefore, restricted by the ability of the knitting machine for formation of the loops. In this case, the knitting machine is capable of forming V-shaped bends by tight knitting and use of small pins. However, these bends are symmetrical and thereby limited in shape. The step of stitching or knitting the longitudinal members 24, 25 thereon mandates that the wire be symmetrically formed. Similarly, GB '963 employs a method whereby cotton is knitted or woven with cotton yarn when the wire is bent as desired using pins, and the like. See lines 89-91 in Column 2. Both Schlegel and GB '963 bend the wire and knit the longitudinal members thereby limiting the profile and configuration of the wire.

This is exactly the disadvantage that the method of the present invention overcomes. The method of the present invention first *pre-forms* the wire into a desired

configuration, which could be asymmetrical, and then, subsequently, *adheres* the longitudinal reinforcing members thereto. Knitting or weaving is not used at all in the present invention. Thus, the present invention provides a method that can form sealing strips that are far superior that what can be formed with prior art methods.

In view of the foregoing, the combination of Schlegel and GB '963 fail to render Claim 10 obvious. Therefore, Claim 10 is patentable over the prior art.

VIII. Rejection of Claims 11-13 under Section 103

Claims 11-13 stand rejected under Section 103(a) as being unpatentable over Matsumiya (US 5204157) in view of Cook. The office action states that Cook teaches various cross-sections of wire that can be employed.

Claims 11-13 are dependent on now allowable Claim 1. Therefore, Claims 11-13 are now allowable over the cited prior art.

IX. Rejection of Claims 8, 15-19 under Section 103

Claims 8 and 15-19 stand rejected under Section 103(a) as being unpatentable over Matsumiya (US 5204157).

The office action states that Matsumiya render obvious Claim 8 that is directed to the material for the longitudinal carrier. Claim 8 is dependent on now allowable Claim 1. Therefore, Claim 8 is now allowable over the cited prior art.

As to Claim 15-19, the office action states that Matsumiya does not teach adhering a tape layer onto the wire. Claims 15-19 are dependent from Claim 1, which requires that a wire be first preformed. Then, a mask layer is adhered thereon. The office action merely states that two known processes are combined together to arrive at the limitations in Claims 15-19. There is no teaching found in Matsumiya to support this rejection under Section 103. Thus, a rejection under Section 103 cannot be supported.

Also, Claims 8 and 15-19 are dependent on now allowable Claim 1. Therefore, Claims 8 and 15-19 are now allowable over the cited prior art.

X. Parent Application Has Issued

This application is a divisional of Serial No. 10/075,788 which has now matured into U.S. Patent No. 6,761,954. Applicant's '954 patent is directed to a sealing strip while the present invention is directed to a method of forming a sealing strip.

XI. Conclusion

Applicant submits that Claims 1-20, as amended, are allowable over the cited prior art. In view of the above, Applicants submit that pending Claims 1-20 are now in condition for allowance. Reconsideration of the Rejections and Objections are requested. Allowance of Claims 1-20 at an early date is solicited.

If an extension of time is required for timely submission of this response, Applicant hereby petitions for an appropriate extension of time and the Office is authorized to charge Deposit Account 02-0900 for the appropriate additional fees in connection with the filing of this response.

The Examiner is invited to telephone the undersigned should any questions arise.

Respectfully submitted,

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PRIOR ART
Matsumiya

gaps will remain

longitudinal centerline

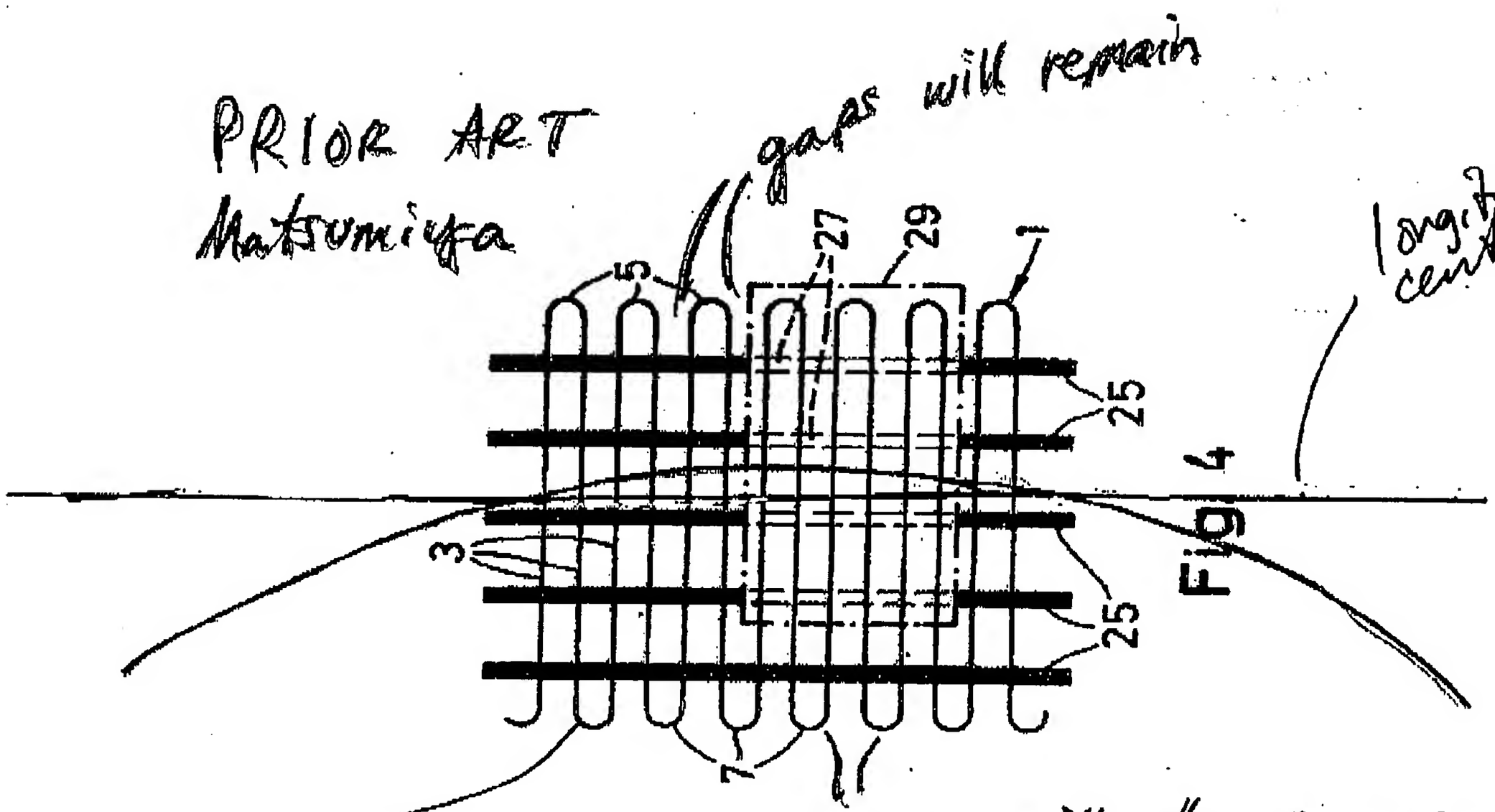

Fig 4

Since wires are knitted, the loops must be symmetrical about the centerline

bends will touch when roll formed on arc line because clips are not tapered inwardly

Fig. 4 of Matsumiya

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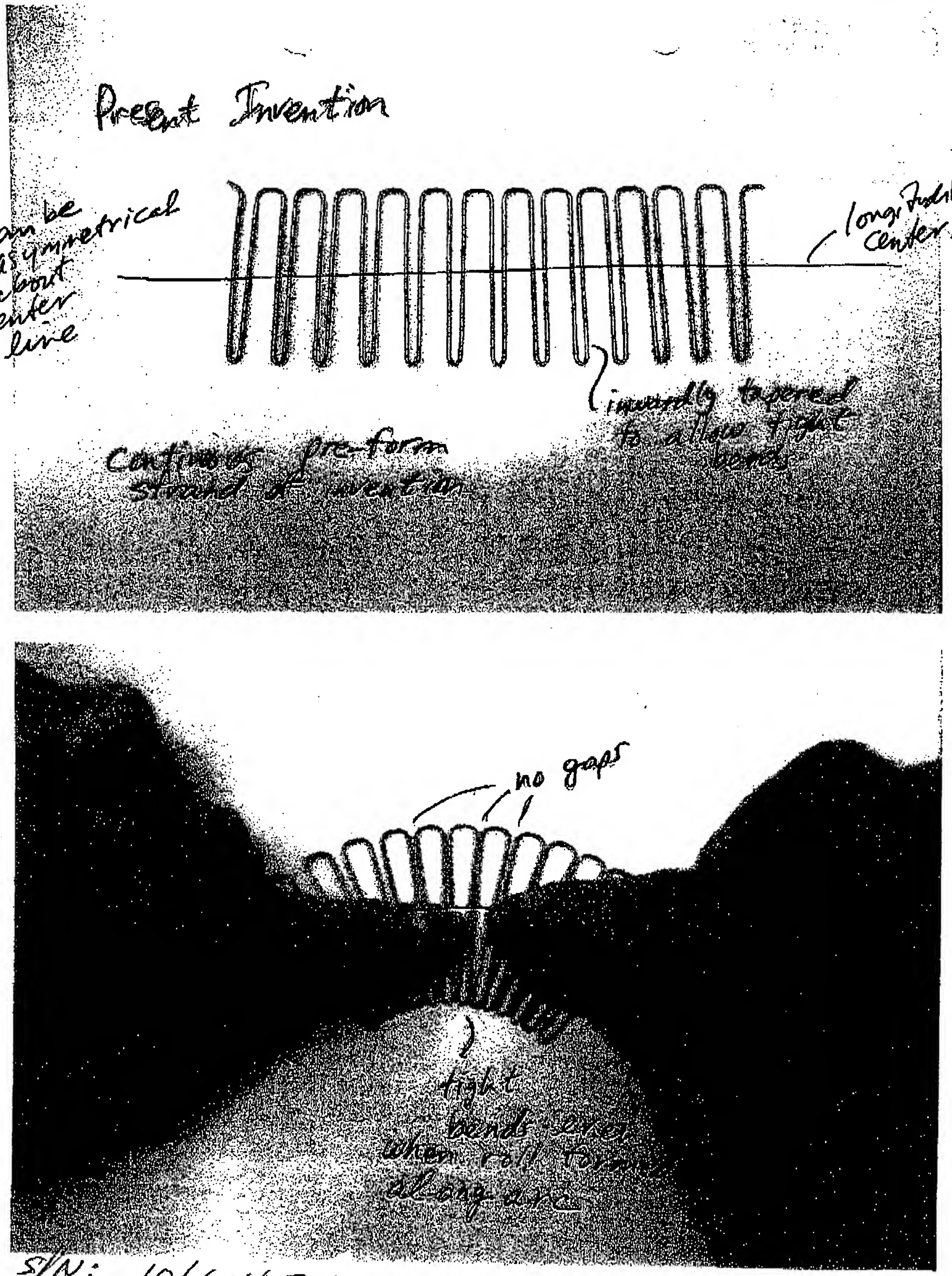

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